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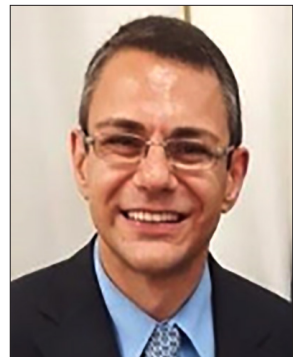

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The Benefits of Community Building and Participatory Leadership in an Interdisciplinary Virtual Professional Learning Community in Higher Education during COVID-19 and Post-Pandemic Times

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The transition of educational institutions to remote learning during and in the aftermath of the COVID-19 pandemic breathed new life into Professional Learning Communities (PLCs). For full-time and adjunct faculty

who were struggling with unexpected technology issues and social isolation, PLCs became platforms for building social and professional ties, further learning, and problem-solving. An extensive number of specialized studies have outlined the definition of PLCs as an umbrella term encompassing an array of collaborative efforts in education united by the distinctive features that include (1) engaging in ongoing collaborative activities to identify and work towards common goals, (2) co-constructing, sharing, and disseminating knowledge, and (3) sharing and reflecting on individual practices. Despite an impressive history of research on PLCs, certain fields remained understudied, in particular, opportunities of fostering university's goals and major relevant concepts via PLC, inclusive participatory leadership, emotional interaction, and collaboration in interdisciplinary PLCs. This exploratory qualitative study demonstrates the benefits of an interdisciplinary virtual PLC, as exemplified by the PLCs implemented at Westcliff University in Irvine, California, USA, based on case study, self-reflection, observation, unstructured interviews, and analyzing university statistics. The study has uncovered numerous benefits of an interdisciplinary virtual PLC in a higher educational institution, applicable both to an emergency (COVID) situation and to a regular mode of work after the pandemic, including knowledge-sharing, disseminating, and constructing new knowledge; building skills and educational practices through the sharing of instructional strategies and dissemination of the new technologies; enhanced professional growth, especially for the less experienced instructors; relation-building and creating a trusting and positive emotional atmosphere, as well as a platform for participatory inclusive leadership. Analysis of the university statistics confirms the improvement of students' learning outcomes after their respective professors had participated in the PLC. The recommendations based on the discussed experiences and driven conclusions are provided to help educators and universities benefit fully from the implementation of a PLC in their institutions.

*   ***Keywords****: interdisciplinary virtual professional learning community, higher education, knowledge-sharing, professional development, participatory leadership, COVID-19 emergency, emotional engagement.*

Introduction

Higher education has faced unprecedented challenges due to the COVID-19 pandemic, quarantine measures, and subsequent transition to remote learning. During lockdown, online education was oftentimes the only option for continuing to teach, and educators struggled, both technologically and emotionally, to make online learning as meaningful and fulfilling as face-to-face learning had been, both for the students and teachers alike.

One of the strategies employed in the transition to remote work was the implementation of professional learning communities (PLCs). PLCs had been used in primary and secondary education for decades, but had yet to find a firm foothold in higher education. The pandemic served as the impetus for higher education to embrace PLCs so as to help facilitate faculty connection and offer support in navigating the online classroom. The phenomenon of PLC

in higher education, its participants' perceptions and inner motivations, and its impacts and benefits comprise a compelling topic of study. This exploratory qualitative study aims to unveil the benefits of an interdisciplinary virtual PLC, as exemplified by the PLCs implemented at Westcliff University in Irvine, California, USA. Based on this case study, self-reflection, observation, unstructured interviews, and university statistics, the authors analyzed the potential for online PLCs to further knowledge-sharing, community-building, participatory leadership, and emotional engagement in achieving the university's mission to educate, inspire, and empower its students towards meaningful and satisfying professional and personal lives.

History of the PLC Movement

Peter Senge (1990) wrote *The Fifth Discipline* to promote the concept of learning organizations to increase employee's capacity to generate results and nurture critical thinking patterns within a corporate team setting. Building on Senge's work, DuFour (1998) introduced the concept of PLCs for educators in *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement*. DuFour's research shifted the paradigm from business to education, and his research defined PLCs as teams of educators in a school setting regularly collaborating together about best teaching practices and assessment to increase student achievement. DuFour et al. (2008) sought to maximize student achievement and close gaps by identifying three main ideas: all students have the capacity to learn, a robust focus on quantifiable results, and fostering a culture of collaboration. High performing PLCs are characterized by teachers working together to share expertise, review student work and school data, plan learning experiences, and focus on student learning. The literature on PLCs repeatedly highlights the importance of collective inquiry, action and results orientation, commitment to improvement, a sense of belonging, interdependence and reliance among team members, trust, collective creativity, supportive and shared leadership, and commitment to a purpose and vision [DuFour 2004; Lenning & Ebbers 1999; McLaughlin & Talbert 1993; Newmann & Wehlage 1985]. At the heart of PLCs is collaboration. Studies have evidenced that collaborative professional discussions positively change practices and create new and innovative approaches to learning, which is significant to a teacher's professional development and school reform for closing achievement gaps [Louis et al. 1996; Lunenburg 2010; McLaughlin & Talbert 2006; Sleegers et al. 2013; Sparrow et al. 2011; Weißenrieder et al. 2015]. While PLCs continue to evolve, certain principles have proved to be foundational to the building of a successful PLC: reflective dialogue, focus on student learning, interaction among teacher colleagues, collaboration, and shared values and norms [Hord 2009; Kruse et al. 2009; Leithwood & Louis 1998].

Building interpersonal relationships is essential to the collective learning and sharing practices that drive PLCs and, thus, leadership is instrumental

in creating a climate of professional growth and an organizational culture where attitudes, beliefs, and values support the concept of shared leadership [Cakiroğlu et al. 2012; Gruenert 2008; Hargreaves 2007; Woolfolk et al. 1990; Bush 2015; Toole & Louis 2002; Turner et al. 2018; Wang & Degol 2016]. Instructional leadership is at the heart of PLCs, where teacher-leaders have both teaching and leadership responsibilities fully supported by and in conjunction with administration [Bush & Glover 2014; Dinham 2016; Hallinger & Wang 2015; Lahtero & Kuusilehto-Awale 2015; Turner et al. 2018]. As indicated by Al-Ani et al. (2011) and Harris (2011), shared leadership strengthened professional development because both teachers and traditional leaders modeled the vision, built trusting environments, and utilized resources to impact student engagement.

For instructional leaders, changing the paradigm from isolation to one of interdependence is challenging [Barth 2002]. PLCs offer a potential solution to this problem by providing job-embedded learning opportunities that focus on problems of practice within a community dedicated to raising teacher quality; this quality is raised through changing behaviors and working collectively rather than individually [Ilomäki et al. 2017; Lieberman et al. 2016; OECD 2015, 2019; Opfer & Pedder 2011].

While these elements were intended to identify the parameters for successful PLCs in a traditional K-12 school model, they are also instrumental in establishing PLCs in higher education. Dufour and Eaker (1998) noted that the most promising strategy for sustained, substantive school improvement is developing the capacity of school personnel to function as a PLC. This concept has proven to be successful, and while online meetings are certainly not the traditional space for PLCs, teaching remotely in higher education during the pandemic lockdown fostered the endemic isolation that DuFour, Horn, and Little (2012) saw as detrimental to both teacher and student success. The formation of higher education PLCs has multiple positive outcomes, notably for faculty growth. Higher education benefits from PLCs through professor collaboration linked to shared goals concentrating on student achievement by improving the efficacy of the professor [Tinnel et al. 2019; Wilson et al. 2020]. Higher educational institutions can create an environment that nurtures and supports the growth of PLCs, fostering a culture of collaboration, continuous learning, and professional development among its faculty and staff.

Literature Review

Professional learning community is an umbrella term [Olsson 2019] encompassing a variety of educator's collaborative endeavors, varying widely from a mothers' photo sharing group helping in the transition to online learning [Cohen Miller & Izekenova 2022] and using social media as a platform for virtual

PLCs [Bedford 2019] to research and faculty development endeavors in higher education [Bedford & Rossow 2017; Sterenberg et al. 2018; Terry et al. 2018].

Despite an array of differences, the concept of PLCs is shaped by a number of distinctive features that include (1) engaging in ongoing collaborative activities to identify and work towards common goals; (2) co-constructing, sharing, and disseminating knowledge; and (3) sharing and reflecting on individual practices [Tan & Caleon 2016]. As a result of an extensive scholarly literature review on PLCs in primary and secondary schools, Olsson (2019) determined the following key components of a PLC:

1. Professional development as an integrated and ongoing part of the school organization.
2. The local school context as the point of departure.
3. Collaborative and reflective inquiry.
4. Forming a shared vision and goals for students' learning.
5. Collective responsibility for students' learning outcomes.

Unanimously recognizing PLCs as beneficial, researchers typically focused on two main aspects of PLC impact: (1) the students' learning quality and (2) the teachers' engagement and development.

In terms of the students' learning quality, schools that have PLCs were reported to have higher learning results [Lomos et al., 2011] and improved quality of education because of increased peer review of information being taught to students [Gama et al. 2022]. For the teachers, PLCs offered opportunities for professional development [Jocius et al. 2022; Zhao 2013], research [Sterenberg et al. 2018; Turner et al. 2017], creation of a sense of community [Hesen et al. 2022; Tucker 2020; Turner et al. 2017], and enhancement of well-being (Liang et al., 2022). These findings demonstrate PLCs' potential benefits for students and teachers. However, the benefits for educational leadership, educational institutions, and other stakeholders have not yet been widely discussed.

With most PLC studies focused on primary or secondary education, data on higher education PLCs has been minimal. Following the move to remote teaching during the COVID-19 pandemic, there has been a growing body of research focused on the value of PLCs in overcoming isolation during the eighteen-month lockdown [Trikoilis & Papanastasiou 2020; Tucker & Quintero-Ares 2021].

A virtual collaboration model has found further development in higher education PLCs. Higher education PLCs using the Walden Junto model, a blend of synchronous and asynchronous online interactions, helped to connect faculty as a community through sharing resources [Bedford & Rossow 2017]. Studying professional learning communities as a means of faculty support during the COVID-19 transition to online learning, Tucker & Quintero-Ares (2021) found that PLCs in higher education proved to be conducive to technology

integration, community building and sharing online teaching practices. This research revealed the benefits of interdepartmental PLCs and technology training and added to the knowledge about the value of PLCs as a platform for informal learning.

Research findings demonstrated numerous positive effects from participating in a PLC, whether virtually or in person. The benefits included instructors being more willing to implement new technology to support and expand their instruction, expanding their pedagogical practices because of the nature of the interdisciplinary group included in the PLC [Terry et al., 2018], developing deeper pedagogical relationships amongst participants and with the leadership in the PLC [Sterenberg et al. 2018], and increasing collaboration and decreasing isolation among remote adjunct faculty involved in the PLC [Schieffer 2016]. The success of PLC could be enhanced by using a social media platform to include tools for virtual meetings with audio and video components, a shared calendar, a polling and survey feature, email and text capabilities, and a document-sharing file manager [Bedford 2019].

In the university setting, interdisciplinary and interdepartmental PLCs promoted exchanges of experiences between members and supported expansion of their pedagogical practices within this new modality [Terry et al. 2018; Tucker & Quintero-Ares 2021]. Even on a broader scale, Cherrington et al. (2018) discussed developing a pan-university professional learning community, revealing community-building, ground-up design, and creating safe spaces as its main benefits. The studies of higher education PLCs revealed the following fields in which they proved beneficial:

1. Building a community, especially, to include faculty working in different fields of knowledge (interdisciplinary/interdepartmental/pan-university).
2. Overcoming isolation and, in particular, uniting adjunct faculty.
3. Creating opportunities for informal learning and exchanges of experiences and technologies, including new classroom technology.

Little to no attention was given to PLCs as agents for the dissemination of new ideas and relevant concepts (like diversity, equity, and inclusion), cultivating the university's unique philosophy and culture and enhancing the leadership efforts for inclusivity and belongingness. Numerous accounts detailing the benefits of virtual PLCs during the pandemic did not address if this modality would be effective in post-pandemic times. With the purpose of fully discovering the potential benefits of a virtual interdisciplinary higher education PLC for the students, faculty, leadership, and university as a whole, we have initiated this exploratory qualitative study to answer the following **research questions** (RQs):

1. Is a virtual interdisciplinary PLC conducive to promoting awareness and university culture building?

2. Does a virtual interdisciplinary PLC contribute to faculty professional development?
3. How does a virtual interdisciplinary PLC promote social connectedness and emotional well-being of its members?

Methodology

This study is an exploratory qualitative study aimed at exploring the potential benefits of engaging interdisciplinary faculty in a virtual PLC in terms of knowledge-sharing, community-building, professional development, inclusivity fostering, and the social-emotional well-being of full-time and part-time faculty. To scrutinize the formation, functioning, and impacts of virtual online PLCs, a case study of the PLCs at Westcliff University between 2021 and 2022 was conducted. It included the analysis of the history of the PLCs run during and after the COVID-19 pandemic, informal interviews with the participants, and team self-reflection, supported by the analysis of the university data for the respective periods.

The history of the PLCs that functioned during six consecutive sessions, between January 2021 and December 2022, was collected and analyzed based on the university documents, records of PLC meetings, and informal interviews with the participants.

Overview of PLCs at Westcliff University

Since January of 2021, the virtual PLCs spearheaded by the College of Education at Westcliff University have brought together interdisciplinary faculty from across the country to engage in dialogue about topics that include incorporating diversity, equity, and inclusion (DEI) practices in the classroom, educational technology, co-teaching, curriculum enhancement, data-driven teaching practices, and action research.

Interdisciplinary Faculty

Spring 2021: Due to a re-imagining of the general education curriculum at Westcliff University from a more traditional model to an integrative one (retitled Integrative Studies), the College of Education's first PLC became the vehicle through which faculty could not only invest themselves in the creative approach for teaching the new curriculum but also as a way to learn how to introduce the new content and best support students transitioning into the Integrative Studies curriculum. The outcomes of the Spring 2021 PLC were the creation of a new faculty orientation in Moodle (Westcliff University's student learning management system – LMS) focused on introducing faculty to the new curriculum, which PLC participants were able to provide feedback on, and a culminating best practices list created by PLC participants that could be shared with faculty new to the Integrative Studies curriculum.

Incorporating DEI Practices in the Classroom/Educational Technology

Fall 2021: Faculty participants engaged in discussions surrounding curriculum, instruction, and assessment through the lens of DEI and reflected on collaborative practices that focused on student learning and maximizing achievement. This PLC was a blending of the College of Education's need for a syllabus statement for Integrative Studies courses that highlighted the focus on DEI in the curriculum and the faculty PLC participants' need to learn about educational technology tools that could be used in the live classroom. The outcomes of the Fall 2021 PLC were a finalized syllabus statement and a shared learning experience of the use of educational technology through a DEI lens in the classroom based on discovery, experience, and reflection.

Spring 2022: Stemming from the Fall 2021 PLC's focus on DEI and educational technology, there was an apparent need and desire for further research into these two topics within the PLC setting. Faculty participants engaged in discussions surrounding curriculum, instruction, and assessment through the lens of DEI and data-driven teaching practices that focused on student learning and maximizing achievement. This involved quantitative and qualitative data collection and using this data to inform instructional practices. The outcome of the Spring 2022 PLC was the creation of a repository of DEI and data-driven teaching practices housed in a Google Site accessible to all College of Education faculty. The repository includes links to a variety of websites, videos, activities, and articles found by faculty participants.

A major takeaway from this PLC was the difficulty participants faced when searching for data-driven tools associated with DEI to use in their classes. Most of the artifacts discovered were qualitative in nature versus quantitative. Another major takeaway was the difficulty participants dealt with finding activities and resources to use in specific subject matter areas, particularly in math.

Co-teaching

Spring 2022: Based on the university's desire to have more faculty participate in co-teaching practices, faculty participants engaged in discussions surrounding curriculum, instruction, and assessment through the lens of peer support and reflection on collaborative practices that focused on faculty well-being and student learning. During this PLC, participants worked in pairs to collaborate on an opportunity for co-teaching in their classes. Through this process they built a relationship of trust and the ability to rely on each other's strengths. The pairs co-taught one class each, giving students a chance to collaborate and learn from each other and from two faculty members. After co-teaching their class, each pair of faculty reflected upon what went well and opportunities for improvement. This culminated in each pair writing and submitting a proposal based on their PLC co-teaching experience for Westcliff University's in-house annual symposium.

Curriculum Enhancement

Summer 2022: Due to an initiative across colleges to move final assignments from Week 8 to Week 7, this PLC focused on doing so for specific undergraduate education classes. This process involved not simply moving the final assignment deadline up a week but revising readings, discussion questions, and activities in Weeks 7 and 8 to be in alignment with course final assignments and bring increased rigor to appropriate final assignments. In order to accomplish this and enhance the curriculum, this PLC brought together faculty across disciplines within the College of Education to design innovative solutions to this initiative, resulting in more academic rigor and strengthened opportunities for students to have assignments that better aligned with course learning outcomes and the ability to work in small groups.

Educational Technology/Data-driven Research Practices/Action Research

Fall 2022: Faculty engaged in exploration of learning theory associated with technology and design (connectivism, transactional distance, and cognitive load) and the implementation of educational technology into their lesson plans, focusing on educational technology that aligned with CAPRI (Westcliff University's teaching and learning framework: contextualized, applied, practical, relevant, and inclusive learning). Faculty also reflected on and assessed the use of this educational technology in their classroom through the collection of real-time student data on educational technology experience to ensure improved student outcomes during the classes currently being taught and driving change in future classes.

Team Self-Reflection

To reveal the impact of participation in the PLCs participants' knowledge/awareness, professional skills, social connectedness, and emotional well-being, the team of researchers has engaged in self-reflection, framed as an open-ended questions survey with the subsequent content analysis of the texts of responses.

Participants included in the study were the Westcliff University interdisciplinary College of Education faculty who had participated in two or more PLCs and were willing to share their experiences. The total number of participants equaled 7 (2 full-time faculty and 5 part-time faculty; 2 male, 5 female; 3 with graduate degree (MA, MS); 4 with doctoral degree (PhD, EdD, JD), teaching courses in mathematics, humanities, history, communications, English, science, education, leadership).

To explore the concepts of interest, all the expected PLC effects were categorized into four groups:

1. Cognitive – creating awareness of the most important concepts/values etc.
2. Professional development – spreading new methods and practices.
3. Social – connecting faculty remotely and building social ties.
4. Emotional – creating a welcoming environment, stress management.

These categories were targeted in the survey specifically designed to understand the participants' lived experiences and perceptions of interdisciplinary virtual PLC collaboration, as well as application of the PLC findings in their classrooms.

Data collection was performed via self-administered questionnaire that was distributed and collected anonymously via Google form. The participants were asked to reflect on their experiences, as guided by the questionnaire; no restrictions were placed on their individual narratives. The only recommendation was to use clear, unambiguous language. The questionnaire was formulated to avoid leading or charged questions, and included the following:

1. Did you learn any new concepts/ideas in PLC meetings? Please give an extended answer. Please explain how your findings are related to the university goals and values.
2. Did you learn any new teaching methods/techniques/technologies? If yes, did you use them in class? Did you observe any change in your students?
3. Did the PLC influence your relations with colleagues or your opinion about colleagues? Please explain.
4. Were all the PLC participants equal contributors? Did anyone stand out to you? How would you describe their role?
5. How has participation in PLC influenced your emotional state?

Responses were received from 6 participants (response rate 86%). The responses were pooled and analyzed for content to reveal common themes and patterns.

Results and Discussion

Theme 1: Knowledge sharing. As a result of self-reflection, all the participants indicated that they learned new concepts in PLC, most of them recognizing the concept of DEI as valuable and core to the university's values (5 of 6 participants, 83.3%), followed by innovative technological solutions (3 of 6 participants, 50%) and data-driven decision making (3 of 6 participants, 50%). The other concepts mentioned by the participants included co-teaching, the application of Westcliff's CAPRI teaching and learning framework, emotional intelligence, and the increase of student success. A majority of participants (4 of 6, 66.6%) associated the learned concepts with the university goals and values.

In light of PLC themes and goals, most of the target concepts were retained by the participants and connected with the institutional goals and values, which proves the effectiveness of PLCs in disseminating relevant ideas and promoting the values and goals of the university. The concepts which were mentioned by the most of the participants – DEI and innovative technological solutions – were also related to classroom teaching and development

of curricula/teaching materials. Thus, PLC discussions promoted the implementation of the newly acquired concepts into educational practices.

These findings are in line with the studies of the PLCs in secondary and elementary education. PLCs are viewed as collaborative efforts to construct knowledge [Alderton et al. 2011; Schieffer 2016] and as an opportunity for informal learning [Marsick 2009]. PLCs help online faculty understand new ideas and learn from their peers [Kabilan et al. 2011; Schieffer 2016]. Moreover, PLCs are believed to have a great potential to influence educational improvement through knowledge sharing from PLC participants (members) to other teachers (non-members) [Brinkman 2022], teachers' knowledge-sharing strongly associated with learning-centered leadership [Brinkman 2022; Talebizadeh et al. 2021], and incorporation of those strategies into the classroom experience for students [Bedford 2019]. Incorporation of the aforementioned strategies ensures that students will have the skills and attitude to be competitive in the marketplace of a global society [Hilliard 2012].

The results of the survey, along with prior research findings, allow us to establish PLC knowledge-sharing as the cause of learning or better understanding new concepts. Thus, PLCs may be considered the tool for disseminating and constructing new knowledge in the university teaching community.

Additionally, PLCs focused on the institution's goals, provided a platform for job-embedded professional development, improved instructional practices, developed trusting interdependent relationships, and, ultimately, increased student achievement of program learning objectives. Thus, collaboration was vital to attain institutional outcomes as evidenced by improved professor efficacy and increased student performance. The findings emphasize the importance of fostering a collaborative culture within college to optimize educational experiences and outcomes for all.

Theme 2: Professional growth.

Teaching methods and techniques, particularly those employing new technology, were the focus of many PLC meetings. All participants acknowledged learning new methods and techniques, with the most generally recognized being the use of classroom technology (5 of 6 participants, 83.3%). The examples included an array of tools, from the use of the chatbox for the students' responses and instructional videos to Playposit, Kahoot, Ed Puzzle, Pear Deck, Quizzizz, Teachify, and Equity Maps. In the context of teaching methodology, DEI was mentioned (2 of 6 participants, 33.3%) as a way to create a "flexible and individualized climate," along with classroom management techniques to optimize time and measure the achievement of the learning outcomes (3 of 6 participants, 50%).

When surveyed about the implementation of newly learned teaching methods and techniques, the survey revealed an interesting split: 3 of 6 (50%) participants reported the successful use with the students' positive re-

actions ("students really enjoyed the use…", "were very enthusiastic… asked for more"). On the other hand, the other 3 (50%) participants had a problem utilizing the learned methods in the classroom due to "a lack of detailed information provided with the demonstrations" or a lack of confidence in their applicability in an online classroom.

Our PLC that focused on incorporating new technology into the classroom was developed in recognition of the fact that while classrooms rely more heavily on technology, there still remains a gap in useful technology integration in the classroom [Bowman, et al., 2022]. The end goal of the PLC was to enable professors to comfortably integrate technology more effectively into the online classroom. Our results demonstrate that PLCs "may be an appropriate professional development activity to create knowledge transfer to practice" [Bedford & Rossow 2017]. Similar effects have also been demonstrated in studies of PLCs focused on science education [Dogan 2016; Jones 2013; Stewart 2014]. These findings are in line with research illustrating that higher education PLCs help professors build skills and educational practices through the sharing of instructional strategies [Bedford 2019], as well as increased professor proficiency with technology [Brock et al. 2014; Cândida Müller & Lucchesi de Carvalho 2014; Valle & Fuchs 2015].

Integrative Studies PLCs at Westcliff University included professionals with differing levels of technological acumen and a broad range of preferred classroom management techniques. As a result, some instructors, while understanding the benefits of new teaching techniques and the importance of utilizing technology to potentially engage students, were not able to utilize new technology or incorporate newly learned teaching techniques. Feedback indicated that more in-depth explanations, demonstrations, or practice would have helped bridge this gap making new technology more accessible. A potential solution is to allot time for scaffolded and differentiated instruction, so that new technology can be taught that increases accessibility of technology and implementation by all faculty, regardless of current technological skill. Another solution is to create an additional PLC that strictly focuses on incorporating new technology into the online classroom.

Theme 3: Relation-building and atmosphere of trust.

PLCs had a positive impact on professional networking with 5 of 6 (83.3%) participants stating that the PLCs were instrumental in establishing new relationships with professors from different departments and colleges; sharing knowledge, expertise, and experience; and building positive, collaborative connections. A few participants (3 of 6, 50%) specifically mentioned that PLCs encouraged engagement and full, open, and honest communications, even in case of disagreement. This created a safe space for open communications and a trusting atmosphere. Importantly, 2 of 6 (33.3%) participants connected it with enhancing the students' experiences through high-quality teaching. In

addition, 1 of 6 (17%) participants connected the interactions within the PLC with achieving the university's mission of educating, inspiring, and empowering one another.

Research notes that PLC participants routinely reported feeling increased confidence and safety as a result of their engagement in PLCs [Bedford, 2019]. In our study, 5 of 6 (83.3%) participants made note of the fact that PLCs led to the development of building collaborative connections with fellow participants that carried over beyond the confines of the PLC. These collaborative connections transcended the PLC continuum with participants reflecting back on previous PLC collaboration to offer insight into current PLCs. This underscores current research, which found that strong PLCs learn from the outside as well as the inside [Hargreaves 2007]. These findings are also in line with the research into PLCs in which participants reported that relationships with fellow participants transcended roles [Coswatte, Mohr & Shelton 2017; Dron & Anderson 2014; McAllister et al. 2014].

This level of sharing and collaboration is dependent on establishing trust and clear communication. Half (50%) of participants indicated that the PLCs in which they participated encouraged an atmosphere of open discourse where ideas could be put forth and discussed with relative ease. This level of trust was fundamental for approaching more sensitive PLC topics, such as DEI. We found that establishing the framework for trust and vulnerability was an essential part of successful PLCs. The importance of trust has been researched in the continued success of PLCs [Bolam et al. 2005; Katz & Earl 2010; Stoll et al. 2006], with a handful of studies examining the different ways trust is established in PLCs [Casas 2019; Hallam et al. 2015]. Our findings suggest that trust is not an apriori requirement of successful PLCs but instead built through successful PLC collaboration [Cosner 2009; Jones & George 2009; Tan & Limm 2009]. The establishment of this trust can lead to more in-depth sharing of critical findings, such as successes and failures of pedagogy implementation and student learning outcome finding, which adds a more nuanced layer to what constitutes success for a PLC. This level of trust is a fundamental building block of a truly integrative PLC built on collaboration among colleagues [Dunn & Schweitzer 2005]. This was of particular significance for our PLC that focused on curriculum revision and development where interdisciplinary groups approached curriculum with the goal of revising specific assignments from an interdisciplinary perspective. Trust was built over the course of the PLC between professors who were familiar with the successes and failures of their respective curriculums and were open to significant changes in assignments and professors who were not familiar with said curriculums.

Importantly, 2 of 6 (33.3%) participants responded that they felt the collaboration and trust established in the PLC had a positive impact on student learning. The overall goal of our PLCs was to further research and profession-

al collaboration among faculty; student learning outcomes were an important though indirect goal, but we kept our PLCs well-defined with space built in for brainstorming and creative discussion so that the focus could shift to student learning outcomes. This flexibility meant PLCs did not face any potential constraint [Sims & Penny 2014]. Our findings indicate that even when the focus is on professional development and collaboration, students will still benefit from PLCs, which confirms the findings of earlier research on the effectiveness of PLCs [Graham 2007; Vescio et al. 2015].

Theme 4: Participants' roles and leadership in PLC.

Regarding the equality of participant contributions in the PLC, participants appeared to be divided. Half (50%) of participants stated that the "PLC participants were equal" in their sharing of ideas and in being heard. One (16.6%) participant explained that they "felt that my opinion and experiences were just as important as [those of] the "leaders.'" Another 3 of 6 (50%) participants said that "the participants were not contributing equally" or were not equally engaged. The reasons cited for this lack of equal contribution and/or engagement included "lack of time," "focus," "background" or "competence in the area."

An additional observation of note by participants was the "evolution" of the leadership roles within the PLC. One (16.6%) participant pointed out that "the roles quickly changed: the leaders became participants just as much as anyone else in the group." Participants identified that what made the initially quiet "participants take a more active leadership role" included their expertise, solid foundation in theoretical frameworks, the ability to increasingly contribute time and focus, and leading by example and inspiration. Moreover, participants identified that other participants stood out because of their obvious enjoyment of the PLC interactions.

Multiple sources support the participant results for Theme 4. Martin et al. (2022) back up the observations by participants that leadership and the level of participation in the PLC evolved in favor of increased participation and reduced leadership. Additionally, Bedford (2019) supports the finding that PLCs in higher education possess an atmosphere that encourages contributions from all participants. Furthermore, Holden and colleagues align with the observation that PLC work is non-hierarchical and participants are equal partners in workload distribution [Holden et al. 2021].

In Westcliff University PLCs, specifically, it was observed that "leaders became participants", demonstrating the potential of participatory inclusive leadership via participation in the PLC. Leading informally, "from the inside," the academic leaders were able to foster the university vision, mission, and goals, as well as important new concepts in a trusting collaborative environment. On the other hand, PLCs allowed participants with no assigned leadership roles to take the lead and contribute more fully to the goals of PLC collaborations and, more broadly, to the university's goals.

Theme 5: Emotional engagement.

In terms of emotional engagement, 5 of 6 (83.3%) participants reported experiencing positive emotions (such as "relaxed," "valued," "inspired," "satisfied," "safe," "enjoying," or "engaged") or a positive atmosphere "where it was safe to share strengths and weaknesses" in the PLC. One (16.6%) participant expressed that the PLC helped to improve their emotional state, and another (16.6%) participant explained that the PLC helped them to "thrive in the face of stress and adversity".

While answering the questions about emotional states, all (6 of 6, 100%) participants cited that the reasons for their positive emotions were interactions with colleagues and leaders, a supportive and collaborative environment, and a culture of community. Positive emotions are conducive to learning [Li et al. 2020]. Shieffer (2016) showed that faculty can explore different topics and teaching methods when they are in a safe environment and have trouble sharing experiences when they do not feel supported. Bedford (2019) explored how PLCs can result in participants having feelings of safety with other PLC participants and PLC leaders; this allowed participants to feel comfortable reaching out to PLC leaders for help as needed and for participant learning to occur. Lastly, Martin et al. (2020) supports the finding that the evolution of a PLC toward an increasingly relaxed and valued environment contributed to participant productivity and allowed for discussions to move from logistically to more pedagogical topics during the life of the PLC.

Based on the self-reflection results and prior research findings, PLCs may be considered an effective tool for creating a positive atmosphere, "family" climate and emotional engagement, especially needed in the face of adversity. Since a positive emotional climate removed the barriers for sharing strengths and weaknesses, participation in PLCs helped faculty identify problems, find solutions, and build self-confidence. For the university leadership, the relaxed atmosphere of PLCs helped reveal fields for further development and continued improvement.

Educating adults for future career opportunities requires a collective effort and must be an intentional sharing of knowledge, skills, and resources, aimed at enhancing methodologies to maximize student performance. Effective professor collaboration allows for the alignment of efforts towards common goals and objectives, the implementation of innovative teaching strategies, and the enhancement of curriculum development. PLCs allow professors to pool resources, learn and incorporate new technologies, and create synergy around a variety of topics directly related to the classroom.

The discussions and conversations during the weekly dedicated time enhance research-based skills and promote reflective practice [Vescio et al. 2008]. Ronfeldt et al. (2015) noted that working together aided in adapting to diverse student needs and informed instructional decisions for targeted reteaching.

Professional development is pivotal for gaining confidence in delivering content material in engaging ways, and PLCs allow for self-efficacy by allowing participants to share strengths and weaknesses and give and receive constructive feedback. A coordinated and consistent approach to instruction that is tailored to student needs through differentiation and personalization influences student motivation [Bakkenes et al. 2015; Hattie 2015].

PLCs are a powerful catalyst for institutional improvement and create a safe place for professors to expand their knowledge, refine their teaching practices, and implement evidence-based strategies that maximize student learning outcomes. Collaborative discussions and sharing of expertise enable instructors to benefit from collective experience leading to effective instruction and innovative approaches that address the specific needs of their students [Bryk et al. 2015]. PLCs prepare instructors to think about and implement inclusive practices and develop a deeper understanding of culturally responsive teaching through differentiation strategies and individualized learning plans to help support marginalized populations. Moreover, instructors are able to identify and address systemic barriers that contribute to achievement gaps, promoting a more equitable educational experience for all students.

The benefits of participation in PLCs pointed out in the self-reflection by faculty-participants, should contribute to the higher quality of instruction and, respectively, improved student learning outcomes. Comparing the university statistics for 8 consecutive sessions in 2021 - 2022, we observed numerous improvements. For students who were taking classes with professors involved in PLC, retention increased by 9.5%, student satisfaction increased by 91%, and student GPA average increased by 0.74 in writing and science courses. For faculty, absenteeism was at a rate of <1%, the average improvement in End of Course Survey results was increased by 0.63, 50% of participants increased the student passage rates by 15%, and 75% of the participants increased mastery of course learning outcomes as determined by class GPA increase by 0.74.

These results serve as a confirmation of the benefits of participation in PLCs.

Conclusions

The study has unveiled numerous advantages of an interdisciplinary virtual PLC in a higher educational institution, applicable both to the emergency (COVID) situation and to the regular mode of work after the pandemic. Based on the themes established through self-reflection, PLC has demonstrated the following potential benefits:

Knowledge-sharing and disseminating and constructing new knowledge: Popularizing new concepts, such as DEI, in the university teaching community

and developing the university's unique ideas, such as the implementation of CAPRI or co-teaching integrative courses occurred.

Building skills and educational practices through the sharing of instructional strategies: Dissemination of the new technologies as applied to the specific situation of the university, its student population and courses taught, has enhanced professional growth, especially for the less experienced instructors, through discussing their experiences with more experienced colleagues. At the same time, challenges of implementing new technologies were identified.

Relation-building and creating the atmosphere of trust: This was conducive to better collegial interactions in curricula-developing teams.

PLC creates a platform for participatory inclusive leadership, allowing the faculty with no assigned leadership roles to lead by example, expertise, and engagement.

Positive emotional atmosphere, trust, collegiality and supportiveness, often transcending the framework of the PLC, create favorable conditions conducive to professional growth, community-building, inclusivity, and belongingness in the university as a whole.

Recommendations

Based on the experiential PLCs conducted at Westcliff University and an extensive literature search on the topic of university PLCs, several recommendations are included below. Many applications of the PLC concept are unique and, therefore, not all recommendations may apply.

The first step is to determine the primary goal of the PLC. This will identify the appropriate member selection. For focused goals, such as curriculum development, members will typically have similar disciplinary backgrounds. In the case of more general goals, such as development and dissemination of the department or university policies, interdisciplinary participation would give a greater breadth of knowledge and experience.

Prepared leadership and clear goals are important components of a successful PLC. Additionally, leadership preparation should include the concept of transformation of leadership as the PLC population matures in the development of interpersonal communications and proactive participation. PLCs may be used to offer the opportunity for every participant to become a leader in a specific context, manifesting their best talents and capabilities.

The size of the PLC will depend to some extent on the PLC goals. However, typically a population of up to 10 members will be more focused and efficient and also promote a secondary goal of the PLC, which is a feeling of inclusion and broadening of interpersonal contacts by the participants.

Limitations and further prospects

This exploratory qualitative study focused on the case of PLCs in Westcliff University, Irvine, California, discussing their general outcomes. Although the authors expect its results to be applicable to a wide range of higher education institutions, local and cultural differences may limit their generalizability. The participants of self-reflection volunteered to participate, which may entail self-selection bias. Further prospects of research in this field may involve conducting similar studies in a wider variety of settings and conditions, with more participants involved, so as to make deeper insights into the phenomenon of PLCs, their specific features, and potential benefits for the participants, students, and universities as a whole.

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дінг, Лара Дорман, Стівен Шепард, Омід Мусаві*. Переваги розбудови
спільноти та лідерства за участю в міждисциплінарній віртуальній
професійній освітній спільноті у сфері вищої освіти під час COVID-19 і
в період після пандемії**

Обмежувальні карантинні заходи та подальший перехід навчальних за-
кладів на дистанційне навчання під час і після пандемії COVID-19 вдихну-
ли нове життя в професійні навчальні спільноти. Для штатних викладачів і
сумісників, які зустрілися з неочікуваними технологічними проблемами та
соціальною ізоляцією, професійні навчальні спільноти стали платформами
для побудови соціальних і професійних зв'язків, підвищення кваліфікації та
вирішення проблем. Велика кількість спеціалізованих досліджень окресли-
ла значення професійних навчальних спільнот як узагальнюючого терміну,
що охоплює низку спільних зусиль в освіті, об'єднаних відмінними рисами,
зокрема (1) участь у поточній спільній діяльності для визначення спільних
цілей і роботи над ними, (2) спільне конструювання, обмін і розповсюджен-
ня знань, а також (3) обмін досвідом та рефлексія щодо окремих практик.
Незважаючи на істотну історію досліджень професійних навчальних спіль-

нот, деякі сфери залишалися недостатньо вивченими, зокрема, можливості впровадження цілей університету та основних концептів через професійні навчальні спільноти, інклюзивне колегіальне лідерство, емоційна взаємодія та співпраця в міждисциплінарних професійних навчальних спільнотах. Ця наукова розвідка з використанням якісних методів розкриває переваги міждисциплінарної віртуальної професійної навчальної спільноти, на прикладі таких спільнот в університеті Весткліфф в Ірвайні, штат Каліфорнія, США, на основі ситуаційного аналізу, контент аналізу, саморефлексії, спостережень, неструктурованих інтерв'ю та аналізу університетської статистики. Дослідження виявило численні переваги міждисциплінарної віртуальної професійної навчальної спільноти у вищому навчальному закладі, застосовні як до надзвичайної ситуації (COVID), так і до звичайного режиму роботи після пандемії, зокрема: обмін знаннями, розповсюдження та конструювання нових знань; формування навичок та освітніх практик шляхом обміну навчальними стратегіями та поширення нових технологій; підвищення професійного зростання, особливо для менш досвідчених викладачів; побудова стосунків і створення атмосфери довіри, позитивної емоційної атмосфери, а також платформи для колегіального інклюзивного лідерства. Аналіз університетської статистики підтверджує покращення результатів навчання студентів після участі відповідних викладачів у професійній навчальній спільноті. Рекомендації, засновані на обговорюваному досвіді та ґрунтовних висновках, надані, щоб допомогти освітянам та університетам отримати найбільшу користь від впровадження професійних навчальних спільнот у своїх установах.

__Ключові слова:__ міждисциплінарна віртуальна професійна навчальна спільнота, вища освіта, обмін знаннями, професійний розвиток, колегіальне лідерство, надзвичайна ситуація з COVID-19, емоційне залучення

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Андрієнко-Генін, Тетяна, доктор філософії, доктор наук, професор кафедри міжкультурної ділової комунікації, лідерства та методів дисертаційних досліджень, колишній заступник декана Школи бізнесу та економіки, перша завідувачка кафедри міжкультурної комунікації та віце-президент глобальної академії Мобільність, Київський міжнародний університет (Україна). Доктор Андрієнко-Генін є викладачем і головою Комітету у справах факультету Сенату факультету Весткліфського університету, Каліфорнія (США). Автор 8 книг та численних наукових публікацій, присвячених міжкультурній комунікації, академічній якості вищої освіти.

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Констен, Джоді, доктор філософії (ділове адміністрування, Університет Вестклiфф), ступінь магістра (викладання, Університет Чепмена, США) і бакалавр наук (політологія, Каліфорнійський баптистський університет). Професор Констен зараз є заступником декана Педагогічного коледжу Вестклiффського університету. Маючи 25-річний досвід роботи в освіті, професор Констен із задоволенням співпрацює з експертами галузі для поглиблення навчання, сприяння інноваціям і трансформації лідерства.

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Мані, Дженніфер, доктор філософії (Клермонтський університет, США). Зараз вона є професором Університету Вестклiффа, чиї дослідження включають цифрову адаптацію та розширення в епоху після пандемії, зокрема дослідження просторів співпраці та конфлікту між технологіями та гуманітарними науками.

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Бродінг, Мері, доктор філософії, доктор педагогіки (навчальний план, викладання, навчання та лідерство, Північно-східний університет, США).

Вона має ступінь магістра з англійської мови (Університет Аризони) та історії мистецтв (Університет штату Сан-Дієго), а також ступінь бакалавра мистецтв з історії мистецтв (Університет Сан-Дієго). Наразі вона працює розробником навчальних програм та інструкцій у Весткліфському університеті та викладає за сумісництвом у кількох місцевих коледжах та університетах. Доктор Бродінг викладає, наставляє та обіймає адміністративні посади у вищій освіті протягом останніх 18 років, і сфера її дослідницьких інтересів включає жінок-ветеранів на курсах письма у вищих навчальних закладах та викладачів у професійних навчальних спільнотах.

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Дорман, Лара, магістр мистецтв (викладання в передових дослідженнях) і бакалавр наук (хімія) (США). Лара була вчителем природничих наук у середній школі понад 14 років і викладала різноманітні курси, такі як біологія, біологія АР, анатомія та фізіологія з відзнакою, хімія, хімія з відзнакою, хімія в коледжі середньої школи та органічна хімія. Вона також працювала вчителем біології та хімії в кібершколі та була членом команди позитивних втручань і підтримки (PBIS), що покращує результати учнів. Лара також розробила навчальну програму з хімії АР для кібершкільної програми, а також навчальну програму з хімії з відзнакою для державної середньої школи.

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Шепард, Стівен, ступінь бакалавра та магістра (електротехніка, Стенфордський університет, США), доцент (математика, Педагогічний коледж Весткліффського університету). Він також викладає в Університеті Фенікса, де він є провідним співробітником факультету і кафедри математики. Завдяки своїй інженерній освіті він отримав великий досвід проектування та управління в аерокосмічній промисловості. Його освіта також включає ступінь магістра з консультування з питань шлюбу та сім'ї, яка є основою для викладання психології та розвитку людини. Він також є брокером з нерухомості в Каліфорнії та викладає нерухомість в Академії нерухомості Пік.

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Мусаві, Омід, ад'юнкт-професор коледжу з історії, політології, комерційного та договірного права (США). Він здобув ступінь доктора юриспруденції в Школі права Трініті в Каліфорнії, цікавлячись правами людини, компенсаціями працівникам і правовим захистом при тілесних ушкодженнях.

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